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EXAMINER	
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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/281,421
Filing Date: March 30, 1999
Appellant(s): BANAVAR ET AL.

Kevin P. Radigan
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 06/23/04.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

This appeal involves claims 1, 10, 14, 24, 25, 34, 38, 47-54.

Claims 2-3, 4-7, 8-9, 11-13, 15, 26-33, 35-37 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

The appellant's statement of the issues in the brief is substantially correct. The changes are as follows:

Claims are rejected: 1, 10, 14, 24, 25, 34, 38, 47-54.

Claims are objected: 2-3, 4-7, 8-9, 11-13, 15, 26-33, 35-37.

(7) Grouping of Claims

Appellant's brief includes a statement that Group I (claims 1-15, 24-38, & 47-54) do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

The examiner agree with appellants "Neither Bracho, Marco, or Chandra teach or suggest storing a message to persistent storage prior to delivery thereof". Therefore, claims 2-3, 4-7, 8-9, 11-13, 15, 26-33, 35-37 are object to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all or the limitations of the base claim and any intervening claims.

Claims are rejected: 1, 10, 14, 24, 25, 34, 38, 47-54.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,266,337 B1	MARCO	7-2001
6,091,724	CHANDRA ET AL.	7-2000
6,021,443	BRACHO ET AL.	2-2000

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

I. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 10, 14, 24-25, 34, 38, 47-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chandra et al. (U.S.Patent No. 6,091,724) in view of Marco et al. (U.S.Patent No. 6,266,337 B1).

In the claims 1, 24, 47, 48, 49, 50, Chandra et al. discloses the system includes receiving a message; and routing the message to a subset of client of the network. The subset include less than all of the clients of the network, and the routing is irrespective of any destination information that may be within the message (see col. 2, lines 48-52). The system includes a router being adapted to receive a message and being further adapted to determine, based on the data content of the message, zero or more links over which the message is to be sent. The determining is irrespective of any destination information that may be within the message (see col. 3, lines 14-18); comprising:

> receiving a message; and routing message to one or more clients of network, routing being based on data content of message irrespective of any destination information that may be within message (see col. 7, lines 24-30, col. 2, lines 48-52, col. 3, lines 14-18).

However, Chandra et al. does not disclose being resilient to router or link failure within network.

Marco et al. discloses a packet retransmission eleminator (36) [router] is installed on opposite ends of a path in network. Each original packet sent over the path is cached on the transmitting and the receiving ends of the path (see Abstract); comprising:

being resilient to router (packet retransmission eleminator 26) or link failure within network without loss of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

Given the teaching of Marco , it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Chandra's system to being resilient to router or link failure within network in order to guarantee the message to be received by all subscriber.

3. In the claim 25, Chandra discloses network comprises a publish/subscribe system supporting content-based subscription, one or more clients comprise suscribers, and wherein routing comprises delivering message to all subscribers requesting a uniform delivery quality of service or if unable to deliver message to all of subsribers requesting uniform delivery, delivering message to none of subscribers requesting uniform delivery (see col. 7, lines 25-30).

11. In the claims 10, 34, Marco et al. discloses detecting failure of a router within tree before completing routing of message to one or more clients of network, reconfiguring tree to replace failed router with a new router, and

automatically generating a request for retransmission of message (see col. 2, lines 48-52, col. 3, lines 14-18).

14. In the claim 38, Marco et al. discloses automatically informing a sender of message when the message has been lost within the network to allow the sender to retransmit message for routing to one or more clients of network so that message is delivered at least once to one or more clients (see col. 2, lines 48-52, col. 3, lines 14-18).

15. In the claim 14, Marco et al. discloses automatically informing a sender of message when the message has not been received by the network to allow the sender to retransmit message to the network for routing to one or more clients of network so that the message is delivered at least once to one or more clients (see col. 2, lines 48-52, col. 3, lines 14-18).

17. In the claims 51-54, Marco discloses routing of message to multiple clients of network is resilent to router failure within network without loss of message (see col. 2, lines 48-52, col. 3, lines 14-18).

18. Claims 1, 10, 14, 24-25, 34, 38, 47-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bracho (U.S.Patent No. 6,021,443) in view of Marco et al. (U.S.Patent No. 6,266,337 B1).

In the claims 1, 24, 47, 48, 49, 50, Bracho et al. discloses the network is a "store and forward" network whose routing is "content-based". In a content-based routing system, information is routed based on the content of the information, and not on the address of publisher (source) or subscribers (destination) in the system (see col. 2, lines 5-19); comprising:

receiving a message; and routing message to one or more clients of network, routing being based on data content of message irrespective of any destination information that may be within message (seecol. 2, lines 5-9, col. 10, lines 18-67).

However, Bracho et al. does not disclose being resilient to router or link failure within network.

Marco et al. discloses a packet retransmission eleminator (36) [router] is installed on opposite ends of a path in network. Each original packet sent over the path is cached on the transmitting and the receiving ends of the path (see Abstract); comprising:

being resilient to router (packet retransmission eleminator 26) or link failure within network without loss of message (see col. 2, lines 3-7, col. 3, lines 15-25, lines 47-58).

Given the teaching of Marco , it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the Bracho's system to being resilient to router or link failure within network in order to guarantee the message to be received by all subscriber.

19. In the claim 25, Bracho discloses network comprises a publish/subscribe system supporting content-based subscription, one or more clients comprise subscribers, and wherein routing comprises delivering message to all subscribers requesting a uniform delivery quality of service or if unable to deliver message to all of subsribers requesting uniform delivery, delivering message to none of

subscribers requesting uniform delivery (see col. 2, lines 5-9, col. 10, lines 18-67).

27. In the claims 10, 34, Marco et al. discloses detecting failure of a router within tree before completing routing of message to one or more clients of network, reconfiguring tree to replace failed router with a new router, and automatically generating a request for retransmission of message (see col. 2, lines 48-52, col. 3, lines 14-18).

30. In the claim 38, Marco et al. discloses automatically informing a sender of message when the message has been lost within the network to allow the sender to retransmit message for routing to one or more clients of network so that message is delivered at least once to one or more clients (see col. 2, lines 48-52, col. 3, lines 14-18).

31. In the claim 14, Marco et al. discloses automatically informing a sender of message when the message has not been received by the network to allow the sender to retransmit message to the network for routing to one or more clients of network so that the message is delivered at least once to one or more clients (see col. 2, lines 48-52, col. 3, lines 14-18).

33. In the claims 51-54, Marco discloses routing of message to multiple clients of network is resilent to router failure within network without loss of message (see col. 2, lines 48-52, col. 3, lines 14-18).

(11) Response to Argument

In the page 8, lines 15-17, the Applicant alleges that "There is no discussion in Marco of router or link failure per se, nor of a resilient routing technique for a network which routes a message without loss of the message".

The Applicant's argument is not persuasive.

Clearly, Marco discloses "resilient routing technique for a network which routes a message without loss of the message" (see abstract, each original packet send over path is cached on the transmitting and the receiving ends of the path) (see col. 2, lines 13-15, a packet that was not previously sent over the hop is copied into a cache and sent over the hop intact) (see col. 3, lines 15-17, retransmission eliminators 36A and 36B reduce the traffic associated with the retransmission of packets over the hop. The first time a packet is sent over the hop, the packet is stored in a cache 38 and 40 at each end of the hop)(see col. 4, lines 35-37, the packet routing controller 58 causes a copy of the packet data 60 to be stored in the data memory 56) (see col. 6, lines 58-67, several different procedures may be implement to account for possible **failures on the hop**. In one embodiment, the path is made reliable. This may involve, for example, using the reliability mechanism associated with TCP, HDLC (in its reliable mode) or PPP (in its reliable mode). In another embodiment, one the component on the receiving end of the path determines that the original packet was never received, a message is sent to the component on the originating side of the path **to request** transmission of the entire packet....., packets are only stored in the cache of predefined period to time(e.g. ten secons) after the original packet is transmitted). Therefore, Marco

clearly discloses "storing the data packet to the cache prior to deliver on the hop in order to make the path reliable".

In the page 9, lines 1-3, Applicant alleged that "There is simply no implication in Marco as to why retransmission occurs, nor is it necessary inherent in Marco that retransmission was the result of a router or link failure".

The Applicant's argument is not persuasive.

Marco discloses why retransmission occurs (see abstract, each original packet send over path is cached on the transmitting and the receiving ends of the path) (see col. 2, lines 13-15, a packet that was not previously sent over the hop is copied into a cache and sent over the hop intact) (see col. 3, lines 15-17, retransmission eliminators 36A and 36B reduce the traffic associated with the retransmission of packets over the hop. The first time a packet is sent over the hop, the packet is stored in a cache 38 and 40 at each end of the hop)(see col. 4, lines 35-37, the packet routing controller 58 causes a copy of the packet data 60 to be stored in the data memory 56) (see col. 6, lines 58-67, several different procedures may be implement to account for possible **failures on the hop**. In one embodiment, the path is made reliable. This may involve, for example, using the reliability mechanism associated with TCP, HDLC (in its reliable mode) or PPP (in its reliable mode). In another embodiment, one the component on the receiving end of the path determines that the original packet was never received, a message is sent to the component on the originating side of the path **to request** transmission of the entire packet....., packets are only stored in the cache of predefined period to time(e.g. ten secons) after the original packet is

transmitted). Therefore, it necessary inherent in Marco that retransmission was the result of a router or link failure.

As to page 9, lines 7-11, Applicant alleged that "Marco fails to uncover any disclusssion of a routing technique which is resilient one of these routers or links failing during the routing process. Marco does not teach how to route a message per se, nor does Marco teach how or when a sender should retransmit a message, nor how or when a receiver should detect a lost message or should request retransmission of a message).

The Applicant's argument is not persuasive.

Marco teach how or when a sender should retransmit a message, how or when a receiver should detect a lost message or should request retransmission of a message (see col. 6, lines 58-67, In another embodiment, one the component on the receiving end of the path determines that the original packet was never received, a message is sent to the component on the originating side of the path **to request** transmission of the entire packet....., packets are only stored in the cache of predefined period to time(e.g. ten secons) after the original packet is transmitted). Therefore, Marco clearly how or when a sender should retransmit a message, how or when a receiver should detect a lost message or should request retransmission of a original message.

See page 9, lines 15-17, Marco does not teach causing retransmission occur, but only respond to a retransmission request initiated by other proprotocol.

Marco, clearly discloses causing retransmission occur (see col. 6, lines 58-67,

several different procedures may be implement to account for possible **failures on the hop**. In one embodiment, the path is made reliable. This may involve, for example, using the reliability mechanism associated with TCP, HDLC (in its reliable mode) or PPP (in its reliable mode). In another embodiment, one the component on the receiving end of the path determines that the original packet was never received, a message is sent to the component on the originating side of the path **to request** transmission of the entire packet....., packets are only stored in the cache of predefined period to time(e.g. ten secons) after the original packet is transmitted). Clearly, Marco discloses "failures on the hop occur and the receiving end of the path determines that the original packet was never received" cause retransmission to occur.

In page 9, lines 20-22, Applicant alleged that "Marco does not discuss or address failure of a link or router in an environment wherein a message is being routed to multiple clients of a network as recited by appellants" .

Marco discuss or address failure of a link or router in an environment wherein a message is being routed to multiple clients of a network (see col. 6, lines 58-67, several different procedures may be implement to account for possible **failures on the hop**. In one embodiment, the path is made reliable. This may involve, for example, using the reliability mechanism associated with TCP, HDLC (in its reliable mode) or PPP (in its reliable mode). In another embodiment, one the component on the receiving end of the path determines that the original packet was never received, a message is sent to the component on the originating side of the path **to request** transmission of the entire packet....., packets are only

stored in the cache of predefined period to time(e.g. ten secons) after the original packet is transmitted).

In the page 9, lines 23-25, Applicant alleged that "there is no teaching or suggestion in Marco of a routing technique which is resilient to router or link failure within a network without loss of the message".

Marco discloses or suggest a routing technique which is resilient to router or link failure within a network without loss of the message (see col. 6, lines 58-67, a routing technique which is resilient to router or link failure within a network without loss of the message).

In page 12, Applicant alleged that "here is no discussion in Marco of how to deliver a message to multiple clients of a network without loss of the message notwithstanding router or link failure within the network. There is simply no teaching of how not to lose messages within a network notwithstanding failure of a router or a link. Marco does not teach any algorithm".

Marco discloses or teaches how to deliver a message to multiple clients of a network without loss of the message notwithstanding router or link failure within the network (see col. 6, lines 58-67, how to deliver a message to multiple clients of a network without loss of the message notwithstanding router or link failure within the network).

In page 13, lines 4-5, Applicant's argument "Nothing in Marco discusses routing resiliency without loss of a message notwithstanding failure of a link or router in the network". The Applicant's argument is not persuasive for the same reason above.

Allowable Subject Matter

The examiner agree with appellants "Neither Bracho, Marco, or Chandra teach or suggest storing a message to persistent storage prior to delivery thereof". Therefore, claims 2-3, 4-7, 8-9, 11-13, 15, 26-33, 35-37 are object to as being dependent upon a rejected based claim, but would be allowable if rewritten in independent form including all or the limitations of the base claim and any intervening claims.

For the above reason it is believed that the rejection (claims 1, 10, 14, 24, 25, 34, 38, 47-54) should be sustained. Respectfully submitted.

08/09/04

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